

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appln No.: 09/881,609)

Applicants: Pedlow, Leo Mark, Jr.)

Filed: June 14, 2001)

For: METHOD AND APPARATUS)
FOR CORRECTING)
CORRUPTED DIGITAL VIDEO)
TRANSPORT STREAMS)

TC/A.U.: 2623)

Examiner: SHELEHEDA, James R.)

Docket No.: 71713/7114)

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Sept. 2, 2008
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AMENDED APPEAL BRIEF

Dear Sir:

Pursuant to 37 C.F.R. §41.37, the applicants hereby respectfully submit the following Brief in support of their Appeal appealing the final rejection of claims 1-12 and 20-22 in the office action mailed August 22, 2006.

Application No. 09/881,609
AMENDED APPEAL BRIEF
Notice of Appeal dated November 22, 2006
Decision of Primary Examiner dated August 22, 2006

(1) Real Party in Interest

The real party in interest is Sony Corporation a Japanese Corporation, with offices in Tokyo, Japan, and Sony Electronics Inc., a Delaware corporation having a primary place of business in Park Ridge, New Jersey.

(2) Related Appeals and Interferences

There are no related appeals or interferences known to appellant, the appellant's legal representative, or assignee that will directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

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(3) Status of Claims

Claims 1-12 and 20-22 are pending and presently stand thrice and finally rejected and constitute the subject matter of this appeal; and
claims 13-19 and 23-25 have been canceled.

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(4) Status of Amendments

No post-final amendments have been submitted.

(5) Summary of Claimed Subject Matter

The claimed embodiments¹ are directed towards systems, methods, servers, receivers and computer program products for maintaining synchronization and/or correcting synchronization problems when transmitting digital files². FIGS. 1 and 4 are reproduced below for the convenience of the reader.

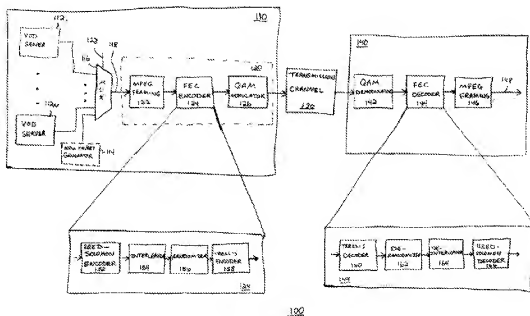


FIGURE 1

¹ There are no means plus function or step plus function claim recitations in the claimed subject matter. Accordingly, this summary of the claimed subject matter does not include any content specifically directed to mapping the contents of the application specification to such recitations.

² See, for example, Application Publication No. 2002/0087995, herein referred to as Application, at paragraphs 006, 0031-0041 and 0044.

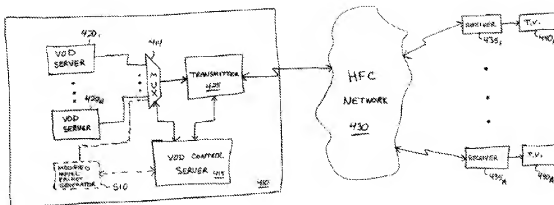


FIGURE 4

Some embodiments are directed to video-on-demand (VOD) and/or digital video systems and servers.³ The VOD systems and/or digital video systems typically comprise a headend⁴ coupled through a transmission channel⁵ to a plurality of receivers⁶ and/or VOD clients. The receivers and/or VOD clients request and/or subscribe to a video and/or a VOD session.⁷ The headend transmits the requested video and/or VOD session⁸ to the receivers and/or VOD clients over the transmission channel.

The headend allocates and/or terminates the transmission of the video and/or VOD session over a transport stream of the transmission channel.⁹ The headend can further transmit one or more dummy sessions and/or padding streams over the transport stream to at least in part

³ See, for example the Application at paragraphs 0005, 0007-0008, 0016, 0042 and 0054.

⁴ See, for example, the Application at paragraphs 0017-0019 and 0042-0044, 0054 and 0057; elements 110, 410, and 510 of FIGS. 1, 4, and 5

⁵ See, for example, the Application at paragraphs 0015, 0017-0018, 0025-0026; 0035, 0041-0044 and 0055-0057; elements 130, 430, 530 in FIGS. 1, 4, and 5.

⁶ See, for example, the Application at paragraphs 0005, 0017, 0019-0033, 0042-0044 and 0057; elements 140, 200, 435_{1A}, 535_{1B} in FIGS. 1, 2, 4 and 5.

⁷ See, for example, the Application at paragraphs 0007-0008, 0016, 0022-0029, 0035, 0041-0044 and 0054-0056.

⁸ See for example, 0017-0019, 0035, 0041-0044 and 0054-0056; FIGS. 1, 4, and 5.

maintain a predetermined minimum bandwidth of content and/or to maintain the number of VOD sessions being transmitted over the transport stream.¹⁰

In some embodiments, the headend when determining whether to transmit a dummy session or padding stream determines whether the bandwidth of content is below a predetermined threshold and/or whether the number of VOD sessions is below a minimum threshold.¹¹ Further in some embodiments, the headend transmits the one or more dummy sessions and further prevents the receivers from decoding the dummy sessions.¹² Additionally, in some implementations one or more dummy sessions or padding streams can be transmitted to ensure that each receiver can synchronize to a subscribed video or VOD session.¹³ In some embodiments, the VOD system or digital video system can encoded content and/or dummy sessions, and may have an MPEG frame synchronizer, encoder and modulator.¹⁴ Further, the headend can terminate one or more dummy sessions, for example, when a request for a new VOD session is received and can transmit a new VOD session over the transport stream.¹⁵

9 See, for example, the Application at paragraphs 0017, 0019, 0035, 0041-0044 and 0054-0056; FIGS. 1, 4, and 5.

10 See for example, the Application paragraphs 0034-0044, and 0054; FIGS. 1, 4, and 5.

11 See for example, the Application paragraphs 0041-0044, and 0054; FIGS. 1, 4, and 5.

12 See for example, the Application at paragraphs 0035, 0043-0044 and 0054; FIGS. 1, 4, and 5.

13 See for example, the Application at paragraphs 0034-0044 and 0054; FIG. 3.

14 See for example, the Application paragraphs 0017-0019, 0041-0044, and 0054; FIGS. 1, 4, and 5.

15 See for example, the Application paragraphs 0041-0044.

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(6) Grounds of Rejection to be Reviewed on Appeal

Issue 1

Claims 1-12 and 20-22 stand rejected under 35 U.S.C. 102(b) given U.S. Patent No. 5,790,935 to Payton (herein referred to as Payton). The applicant disputes these rejections.

Issue 2

Claims 2, 3 and 4 stand objected to due to informalities.

(7) Arguments

Issue 1: Claims 1-12 and 20-22 are Not Anticipated Under 35 U.S.C. §102(b) by U.S. Patent No. 5,790,935 to Payton.

Claims 1-12 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Payton, U.S. Patent No. 5,790,935.

Claim 1

The Examiner has rejected claim 1 as being anticipated by Payton. Applicant respectfully traverses this rejection in at least that Payton fails to expressly or inherently teach each and every element of at least independent claim 1.¹⁶ More specifically, Payton fails to at least teach or suggest “generating a dummy session”, and Payton also fails to teach or suggest at least generating a dummy session “to maintain a predetermined minimum bandwidth of content” as recited in claim 1. For example, claim 1 recites in part:

a headend coupled to the transmission channel, said headend including a video server than can transmit one or more VOD sessions to one or more receivers, and a control server coupled to the video server, the control server ... to cause the video server to transmit one or more dummy sessions over the transport stream to maintain a predetermined minimum bandwidth of content over the transport stream.

In rejecting claim 1, the Examiner equates “recommended items” described by Payton to the “dummy sessions” recited in claim 1. Applicant submits, however, that the “recommended items” described in Payton are not dummy sessions in at least that recommended items are predicted to be, and sent with the intention that they will be locally stored and viewed by customers in a virtual video-on-demand (VOD) system. Additionally, the recommended items in Payton are sent to reduce the amount of bandwidth used by the true VOD system in Payton, and

¹⁶ See MPEP §2131

thus cannot be sent “to maintain a predetermined minimum bandwidth” in the video-on-demand (VOD) system recited in claim 1.

Payton describes a “virtual on-demand” system that specifically reduces bandwidth usage to address the bandwidth limitations of digital transport systems “by offloading a portion of the systems’ peak bandwidth requirements to the local subscribers.”¹⁷ To reduce bandwidth usage, Payton reduces the amount of true on-demand content being “serviced directly from the central distribution system” by sending, and locally storing recommended items during off peak hours so “the system can provide virtual on-demand service” of digital information.¹⁸ The recommended items are predicted by the system using a subscriber profile to be content that the subscriber would be interested in viewing.¹⁹ In Payton, “storing the items locally (local access 16) reduces the on-demand access 18 of transport system [SIC] by 95% or more.”²⁰ Thus, with local storage, at least some subscribers have local access 16 (i.e., virtual on-demand access) rather than all subscribers having to be serviced directly from the central distribution system (i.e., true on-demand access), reducing the number of users accessing the central distribution system during peak times.²¹ Therefore, Payton describes reducing bandwidth usage during peak times by transmitting predicted recommended items during off peak times. Thus, these recommended items are not sent to maintain minimum bandwidth usage but to reduce bandwidth usage and the number of users accessing the central distribution system.

The Examiner in Office Actions dated April 12, 2006 and August 22, 2006 equates the content transmitted from the “recommended” list in Payton to the “dummy session” recited in claim 1. The Examiner states that one of the fashions for transmitting content is:

comprised of transmitting content which has not been requested by subscribers, but may be desired in the future...This content only transmitted when bandwidth is available and there are no pending subscriber requests...Thus, as the non-requested content of Payton is not directed towards any specific user, and only transmitted to

¹⁷ See Payton at the Abstract and at col. 4 lines 8-12.

¹⁸ See Payton at col. 4 lines 7-29.

¹⁹ See Payton at col. 5, lines 6-20.

²⁰ See Payton at col. 5, lines 37-38.

²¹ See Payton at col. 4, lines 8-40.

use extra bandwidth when user requests are not pending, it clearly reads upon the broad limitation of a “dummy session”²²

Applicant respectfully transgresses this interpretation, and submits that Payton describes transmitting recommended items to reduce bandwidth usage during peak hours and not to use extra bandwidth. More specifically, the recommended items are chosen according to subscribers’ preferences and previous behaviors, and are predicted to be “available items 36 each subscriber may be interested in or may request.”²³ When there are no items left on the recommended list, then no content needs to be transmitted. Thus, the recommended item is sent to reduce bandwidth usage during peak hours, with the intention and a high probability that the subscriber will in fact view the recommended item, and not to maintain a minimum bandwidth. Therefore, one skilled in the art would not interpret the recommended items to be transmitted only to use extra bandwidth, and would not interpret the transmitting of recommended items to be a “dummy session” transmitted to maintain a minimum bandwidth.

The Applicant discloses various embodiments to effect such dummy session and has therefore elected claim language that is broader than the specific embodiments shown. That said, however, the words of the claims are not utterly bereft of any meaning as might be conceivably conveniently attributed to them. In a recent *en banc* opinion, the Court of Appeals for the Federal Circuit established the following rules to properly construe the terms of a claim.²⁴ The words of a claim “are generally given their ordinary and customary meaning.”²⁵ The ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.*, as of the effective date of the patent application.²⁶

In some cases, the ordinary meaning of the claim language as understood by a person of skill in the art may be readily apparent even to a lay observer, and claim construction in such

²² See Final Office Action at page 10, emphasis added

²³ See Payton at col. 5 lines 6-20

²⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-1315 (Fed. Cir. 2005).

²⁵ *Id.*

cases involves little more than the application of the widely accepted meaning of commonly understood words. In such circumstances, general purpose dictionaries may be helpful.²⁷ In other cases, however, determining the ordinary and customary meaning of the claim can require examination of terms that have a particular meaning in a field of art.²⁸

Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms distinctive to a particular art, the claim interpreter shall look to those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean.²⁹ Those sources include the words of the claims themselves as well as the remainder of the specification.³⁰ Further, when there are two reasonable interpretations of a claim term, one should ordinarily adopt the narrower interpretation.³¹

In this case, the term “dummy session” is being interpreted very broadly by the Examiner to read on the “recommended items” of Payton. However, Applicant submits that this interpretation ignores a more customary understanding of the words “dummy session” and clearly constitutes an analysis that ignores any context as is provided by the specification.³² In particular, the Applicant has acknowledged in the specification a “dummy session” is, for example, “dummy copies of purchased content”, “padding streams” and/or non-null content that “no client is assigned or authorized to access the content.”³³ Additionally, the application as filed describes how remote servers create “dummy sessions or padding streams and spool out content to Packet Identifiers (PID), without assigning clients to the PID.”³⁴

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.*

³¹ See, e.g., *Digital Biometrics*, 149 F.3d at 1344; *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 93 F.3d 1572, 1581 (Fed. Cir. 1996); *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996).

³² See *Phillips*, 415 F.3d at 1312-1315.

³³ See, for example, Application at paragraphs 0044 and 0054.

³⁴ See, for example, Application at paragraph 0054.

Alternatively, Payton transmits recommended items each expected to be accessed by subscribers, and thus, for at least this reason, the recommended items are not dummy sessions. The recommended items are predicted to be viewed by the subscribers and, thus, are transmitted and locally stored so that subscribers will not need to access the central distribution system for those items; and thus, the “subscribers encounter only small delays so that the system appears transparent.”³⁵ Additionally, once the recommended item is selected to be viewed by a subscriber in Payton, the viewing device will clearly be authorized to access the content.³⁶ Accordingly, Payton, in all embodiments, teaches away from transmitting a recommended item that is just a padding stream and/or is not accessible by a subscriber. It is the intended purpose of Payton that the content be accessible and usable by subscribers, and is thus, not a dummy session. Further, although the predictions may not be exact, in Payton the recommended items of content are viewable content and are intended to be locally accessed and used by the subscribers from the local storage units. Payton does not disclose a server or device that prevents a viewing device from accessing the selected recommended items. Sending a session intended to not be viewed and/or preventing a subscriber from accessing the recommended item is contrary to the intent of Payton to provide content predicted to be subscribed to by the subscriber so that the subscriber does not have to access the central distribution system, and thus, freeing up bandwidth. Therefore, for at least these reasons, the “recommended items” of Payton cannot be interpreted to be a “dummy session” as recited in claim 1.

Furthermore, not only does Payton teach away from generating a dummy session, but Payton also specifically teaches away from transmitting additional dummy sessions in order “to maintain a predetermined minimum bandwidth” of content. Instead, the transmission of recommended items in Payton specifically attempts to reduce the use of bandwidth during peak times and possibly increase virtual on-demand (locally stored) content availability. Accordingly,

³⁵ See Payton at col. 5, lines 39-40.

³⁶ See Payton at col. 6, lines 1-17

Payton does not teach transmitting content items to maintain a minimum bandwidth nor is a decision made to transmit these items to ensure a minimum bandwidth is maintained.

It is noted that the purpose of the system described in Payton is to specifically address limitations in providing true on-demand systems where “each subscriber can interact directly with the central video distribution server to preview the available selections, request one of the selections and control its broadcast.”³⁷ Payton describes the limitation of broadcast systems in providing true on-demand access to a large number of customers is due to either bandwidth limitations and/or cost restrictions.³⁸ Payton states that:

Existing broadcasting systems do not provide true on-demand access but rather provide near on-demand service in which digital video, audio or other information is broadcast to subscribers at staggered intervals...[and] are designed to use a relatively small amount of bandwidth so they can be implemented, and implemented for a profit on existing transport systems.³⁹

In particular, Payton describes issues with, for example, satellite transport systems that have limited bandwidth and may only service true on-demand requests to a limited number of subscribers at any given time.⁴⁰ Payton also describes how systems confined to servicing on-demand requests only from the central distribution system confine the subscriber to certain times and no control because “it is not cost-effective to allocate a unique portion of bandwidth to each subscriber request.”⁴¹ Accordingly, Payton proposes spreading out the transmitting of items requested by subscribers over time and locally storing the items in order to address limited bandwidth capabilities at peak times while still being able to provide a virtual on-demand system.⁴² Further, Payton describes sending recommended items prior to being requested, which

³⁷ See Payton at col. 1, lines 53-56.

³⁸ See Payton at col.1, lines 38-49

³⁹ See Payton at col. 1, lines 16-26.

⁴⁰ See Payton at col. 1, lines 33-38.

⁴¹ See Payton at col. 1, lines 45-49.

⁴² See Payton at col. 3, lines 9-17 and 33-41, and col. 4, lines 8-22.

are predicted to eventually be requested by a subscriber, in order to reduce the bandwidth usage.⁴³

According to Payton, the bandwidth “required to provide virtual on-demand services can be less than 5% of the bandwidth that would be required to provide a true on-demand system” wherein every request is serviced from the central distribution system.⁴⁴ Payton continues stating that the benefit of reducing the bandwidth usage to 5% of previous systems is that “commercially available satellites or cable systems can provide this bandwidth cost effectively.”⁴⁵ Therefore, Payton teaches away from a server, such as the central distribution system, causing a dummy session to be transmitted to maintain a minimum bandwidth. Instead, Payton’s intention is to free up bandwidth to effectively service fewer “subscriber requests [that] must be serviced directly from the central distribution system”, and thus, transmitting a dummy session from the central distribution system that is not intended to be viewed would use bandwidth and not free up bandwidth which directly contradicts the intention of Payton. Further, Payton teaches away from sending dummy copies of already purchased content as this again would defeat the purpose of freeing up bandwidth, and further there would be no benefit based on Payton in transmitting dummy copies of content already purchased. Therefore, Payton does not expressly or inherently teach a dummy session.

Additionally, Payton does not expressly or inherently teach or suggest content to be transmitted from the central distribution system in order to maintain a minimum bandwidth as claimed because Payton does not teach or suggest the central distribution system making a decision that recommended items need to be transmitted in order to ensure a minimum bandwidth is maintained over the transport system. Instead, Payton describes sending recommended items during off peak hours, and when the scheduling processor “determines whether sufficient bandwidth is available for transmission of another item” Payton describes either sending another on-demand item or a refresh item and “if the demand is low, the processor

⁴³ See Payton at col. 4, lines 8-22.

⁴⁴ See Payton at col. 4, lines 39-43, emphasis added

broadcasts over the digital transport system 26 a request to increase the menu selection available to the subscribers.”⁴⁶ Thus, Payton does not teach transmitting another item of content “to maintain” a predetermined minimum bandwidth as the Examiner suggests.⁴⁷ Instead, Payton describes increasing menu selection or sending content when there is available bandwidth. Additionally, in Payton when the recommended list is exhausted, no recommended item is transmitted; and thus, a predetermined minimum bandwidth of content is not maintained. Therefore, Payton at least does not expressly or inherently teach a video server transmitting a dummy session “to maintain” a minimum bandwidth.

Therefore, Applicant respectfully submits that at least claim 1 is allowable over the references of record and respectfully requests a corresponding ruling.

Claim 2

Claim 2 depends from independent claim 1, and thus, at least for the reasons stated above, claim 2 is not anticipated by Payton. Additionally, claim 2 is not anticipated by Payton, in that at least Payton does not disclose a system wherein each receiver is prevented from decoding the dummy sessions.

The Examiner rejects⁴⁸ claim 2 citing Payton at col. 4 lines 64-66, where Payton describes: “Furthermore, the digital items are preferably encrypted so that downloaded items cannot be accessed without first being paid for.” Applicant respectfully traverses this rejection, in that at least Payton describes encrypting all content transmitted to subscribers to ensure payment and not just the recommended items. Encryption does not “prevent” a subscriber with a key to the content from accessing the content; instead, the encrypted content is intended to be accessed by at least one intended subscriber. Therefore, encrypting the digital items cannot be equated to preventing each receiver from decoding a dummy session.

⁴⁵ See Payton at col. 4, lines 43-44, emphasis added

⁴⁶ See Payton at col. 7, lines 36-60.

⁴⁷ See Final Office Action at page 3, lines 12-14

⁴⁸ See Final Office Action at page 3, lines 15-17.

Further, Payton describes that each subscriber playback device (e.g., a receiver) requesting to view the encrypted recommended item is configured to decrypt and decompress the content after the item is received and downloaded.⁴⁹ Thus, in addition to Payton's recommended items not equating to a dummy session, each subscriber is not prevented from decoding the recommended item. In fact, Payton teaches away from preventing the subscribers from decoding and viewing the recommended items, because the intention of Payton is to transmit the recommended items because they are predicted to be content the subscriber will choose to view. Therefore, Payton intends the requested items and the recommended items be accessed and decoded, and thus, Payton does not expressly or inherently teach or suggest, and in fact teaches away from, preventing each receiver from decoding content, particularly the recommended items.

Therefore, Applicant respectfully submits that at least claim 2 is allowable over the references of record and respectfully requests a corresponding ruling.

Claim 3

Claim 3 depends from independent claim 1, and thus, at least for the reasons stated above, claim 3 is not anticipated by Payton. Additionally, Payton at least fails to expressly or inherently teach or suggest the transmitting of dummy sessions to maintain a minimum bandwidth of content "to ensure that each receiver can synchronize to a subscribed VOD session" as recited in claim 3. Therefore, Applicant respectfully traverses the rejection and requests a corresponding ruling.

Although the Examiner equates the recommended items described in Payton to a dummy session, Payton does not describe or suggest that recommended items are transmitted to "ensure that each receiver can synchronize to a subscribed VOD session" as recited in claim 3. Payton describes a system for increasing the availability of virtual and true on-demand content by transmitting items during off-peak times, which in turn reduces the bandwidth usage during on-

⁴⁹ See Payton at col. 6, lines 11-17.

peak times. However, simply reducing the bandwidth usage during peak hours, as described in Payton, does not ensure each receiver can synchronize to a subscribed VOD session. Payton provides an opportunity to free up bandwidth in order to decrease the time the subscriber must wait to be serviced from the central distribution system.⁵⁰ A reduction in time delay cannot be equated to ensuring synchronization. Therefore, sending recommended items, as is done in Payton, to provide faster access to the central distribution system can not be interpreted as ensuring the on-demand session is “synchronized” at the subscriber’s playback device (e.g., the receiver).

Payton does not mention any type of synchronization of the on-demand session, and thus, fails to expressly or inherently teach or suggest any method or system for ensuring synchronization at the subscriber’s playback device. Furthermore, the recommended items in Payton that the Examiner says are being transmitted to ensure synchronization are in fact transmitted prior to a subscriber even requesting the items, for example during a refresh broadcast or during off-peak hours.⁵¹ Accordingly, the recommended items are locally stored, and thus, there is no issue of the subscriber’s playback device finding bandwidth to be serviced by the central distribution system because the item is serviced locally. For at least these reasons, Payton does not teach or suggest that the transmitted recommended items even have any effect on the receiver’s ability to “synchronize to a subscribed VOD session”, and does not teach or suggest they are transmitted to “ensure” that each receiver can “synchronize to a subscribed VOD session.”

Therefore, Applicant respectfully submits that claim 3 is not anticipated since Payton at least fails to teach or suggest transmitting one or more dummy sessions to ensure that each receiver can synchronize to a subscribed VOD session and respectfully requests the corresponding ruling.

⁵⁰ See Payton at 22-54. For example, “If the system becomes loaded, the scheduling processor 46 limits the number of items...that are available to the subscribers.” Thus, the subscriber will have to wait for a requested item to be broadcast during the next refresh broadcast, and the wait will be longer if more subscribers are being serviced from the central distribution system.

Claim 4

Claim 4 depends from independent claim 1, and thus, at least for the reasons stated above, claim 4 is not anticipated by Payton. Additionally, claim 4 is not anticipated by Payton, in that at least Payton does not describe a control server to cause the video server to transmit one or more dummy sessions “to maintain the bandwidth of content at or above the predetermined threshold” in response to a determination that the bandwidth is below the predefined threshold.

As demonstrated above, Payton fails to teach or suggest a server generating a dummy session to maintain the bandwidth of the content at or above the predetermined threshold, (e.g., to maintain a predetermined minimum bandwidth of content). Further, Payton fails to teach or suggest determining whether the bandwidth usage over the transport stream is below a threshold and to cause the transmission of dummy sessions to maintain the bandwidth usage above the threshold. Instead, Payton describes “the scheduling processor 46 monitors available bandwidth over the digital transport system 26 (step 86) and determines whether sufficient bandwidth is available for transmission of another item. If bandwidth is available ...the processor then retrieves the on-demand requested or scheduled refresh item 36” and transmits the item.⁵² Determining when it is possible to send another item during refresh broadcasts and sending the next item on the list when there is bandwidth available, cannot be interpreted to mean determining whether the bandwidth of content over the transport stream is below a predetermined threshold, and transmitting a dummy session to maintain the bandwidth above the threshold. This is because, in Payton, when the on-demand queue and the refresh queue are empty, no content will be sent. Instead, Payton describes that when the processor determines the load on the on-demand queue is low, a request is sent to “increase the menu selection available to the subscribers.”⁵³

⁵¹ See Payton at col. 5, lines 26-31 and 46-50.

⁵² See Payton at col. 7, lines 36-41, emphasis added.

⁵³ See Payton at col. 7, lines 55-60

Further, Payton describes transmitting recommended items, “preferably during off-peak viewing hours so that all of the system’s bandwidth is available to service on demand requests during on-peak hours.”⁵⁴ Payton does not teach transmitting content during on-peak hours when there is no on-demand content requested or maintaining the bandwidth at or above a threshold. Therefore, transmitting content only at specific times (e.g., during off-peak hours and/or on a scheduled refresh broadcast) cannot be equated to transmitting a dummy session to maintain a bandwidth at or above a predetermined threshold. Thus, claim 4 is not anticipated by Payton, and Applicant respectfully requests a corresponding ruling.

Claim 5

Claim 5 depends from claim 1, and thus for at least the reasons stated above, claim 5 is not anticipated by Payton. For the sake of brevity however, for the moment the Applicant is content to rely upon the positions already set forth above.

Claim 6

Claim 6 depends from independent claim 1, and thus, at least for the reasons stated above, claim 6 is not anticipated by Payton. Additionally, claim 6 is not anticipated by Payton, in that at least Payton does not disclose a headend comprising an encoder.

In rejecting claim 6, the Examiner cites⁵⁵ Payton at col. 4 lines 59-64 suggesting that an encoder is inherently present in Payton “to have encoded the MPEG video”. However Payton does not discuss encoding the video. Instead, Payton states at col. 4 lines 59-64 that “[t]he digital items are preferably stored in a compressed format to improve storage and transport efficiency. The Motion Picture Entertainment Group (MPEG2) compression algorithm provides approximately two orders of magnitude of video compression while maintaining sufficient signal quality.” Payton does not describe that the content is encoded. Instead, Payton only describes

⁵⁴ See Payton at col. 5, lines 26-31

⁵⁵ See Final Office Action at pg. 5, lines 3-9.

storing content in a “compressed format” in order to “improve storage and transport efficiency” and does not describe encoding the content.⁵⁶ Furthermore, the Payton system does not teach an encoder and does not teach or suggest a need for performing any encoding. Applicant submits that the content delivered to the system in Payton is delivered in a compressed and encoded format, and thus, there is no need to encode the content. Therefore, Payton fails to expressly or inherently teach or suggest an encoder, and thus, claim 6 is not anticipated by Payton.

Claims 7 and 8

Claims 7 and 8 depend from claim 1, and thus for at least the reasons stated above, claims 7 and 8 are not anticipated by Payton. For the sake of brevity however, for the moment the applicant is content to rely upon the positions already set forth above.

Claim 9

Claim 9 depends from independent claim 1, and therefore is not anticipated by Payton for at least the above stated reasons. Additionally, claim 9 is not anticipated by Payton, in that at least Payton does not teach or suggest terminating a dummy session when a new VOD session is requested.

For example, claim 9 of the Application recites in part “wherein when the control server receives a request for a new VOD session from a VOD client, the control server terminates one or more of the one or more dummy sessions and causes transmission of the new VOD session over the transport stream.” As stated above, the Examiner has incorrectly interpreted the “recommended items” in Payton to be the dummy sessions recited in claim 1. However, assuming arguendo that transmitting recommended items is interpreted to be the dummy sessions, Payton does not provide for the transmission of a recommended item to be terminated when the central distribution server receives a new request for on-demand content.

⁵⁶ See Payton at col. 4 lines 59-60.

In the rejection of claim 9, the Examiner refers to Payton: “wherein the refresh queue item is transmitted and removed from the queue; column 7, lines 36-60”.⁵⁷ The section referred to in Payton describes how the system in Payton prioritizes between retrieving content from the requested on-demand queue and recommended items in the refresh queue, and does not provide for the termination of the transmission.⁵⁸ Specifically, Payton states:

If bandwidth is available and the on-demand queue 49 is empty (step 88), the processor 46 retrieves the next item from the refresh queue 47 (step 90), [and] removes the item from the queue 47 (step 92), ...if the on-demand queue 49 is not empty, the processor 46 removes the on-demand request from the front of the on-demand queue (step 96) and determines whether the on-demand request is also on the refresh queue 47.⁵⁹

Thus, there is no suggestion or description in Payton, and in particular column 7 lines 36-60 cited by the Examiner, of the system terminating the transmission of the recommended item.

Furthermore, Applicant submits that Payton teaches away from terminating the transmission of a recommended item because it is the intention of Payton that the “recommended items” are expected to be subscribed to by customers. Accordingly, a termination of the transmission would prevent the viewing of the item. Thus, the recommended items may not be interpreted to be a “dummy session” because Payton intends that the full recommended item be transmitted and does not describe terminating the transmission of the recommended item when a new on-demand request is received. Thus, Payton fails to expressly or inherently teach each and every claim element of claim 9, and thus does not anticipate claim 9. Applicant respectfully requests a corresponding ruling.

Claim 10

Claim 10 is also not anticipated by Payton, in that Payton fails to expressly or inherently teach each and every element of claim 10. Independent claim 10 recites similar claim language

⁵⁷ See Final Office Action at page 6, lines 4-5.

⁵⁸ See Payton at col. 7 lines 40-60.

⁵⁹ See Payton at col. 7 lines 40-60, emphasis added.

as recited in claim 1, for example, the “transmission of one or more padding sessions” of claim 10 is similar to the “transmit one or more dummy sessions” of claim 1. Therefore, independent claim 10 is also not anticipated by Payton at least for the same reasons described with regard to claim 1.

Claims 11-12

Claims 11-12 depend from claim 10, and thus for at least the reasons stated above, claims 11-12 are not anticipated by Payton. For the sake of brevity however, for the moment the applicant is content to rely upon the positions already set forth above.

Claim 20

Claim 20 is also not anticipated by Payton, in that Payton fails to expressly or inherently teach each and every element of claim 20. Independent claim 20 recites similar claim language as recited in claim 1, for example, both recite the video server to “transmit one or more dummy sessions over the transport stream to maintain a predetermined minimum bandwidth of content” (see claim 1 and 20). Therefore, independent claim 20 is also not anticipated by Payton at least for the same reasons described with regard to claim 1.

Claims 21-22

Claims 21-22 depend from claim 20, and thus for at least the reasons stated above, claims 11-12 are not anticipated by Payton. For the sake of brevity however, for the moment the applicant is content to rely upon the positions already set forth above.

Therefore, Applicant respectfully submits that claims 1-12, and 20-22 are allowable over the references of record and respectfully requests a corresponding ruling.

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Issue 2: Grammatical Changes to Claims 2, 3 and 4 are Not Necessary.

Applicant respectfully disputes these objections and submits the amendments are not necessary because the claim language is accurate and does not require a grammatical change.

(8) Claims Appendix

Claim 1: A video-on-demand (VOD) system, comprising:

a transmission channel;

a plurality of receivers coupled to the transmission channel, a VOD client at each receiver capable of subscribing to one or more VOD sessions over a transport stream; and

a headend coupled to the transmission channel, said headend including a video server than can transmit one or more VOD sessions to one or more receivers, and a control server coupled to the video server, the control server to dynamically allocate and terminate VOD sessions over the transport stream as VOD clients are added and terminated, and to cause the video server to transmit one or more dummy sessions over the transport stream to maintain the predetermined minimum bandwidth of content over the transport stream.

Claim 2: The VOD system of claim 1, wherein the control server to prevent each receiver from decoding the dummy sessions.

Claim 3: The VOD system of claim 1, wherein the control server, if necessary, to transmit one or more dummy sessions over the transport stream to maintain a minimum bandwidth of content over the transport stream to ensure that each receiver can synchronize to a subscribed VOD session.

Claim 4: The VOD system of claim 1, wherein the control server to determine whether the bandwidth of content over the transport stream is below a predetermined threshold, and to cause the video server to transmit one or more dummy sessions, as necessary, to maintain the bandwidth of content at or above the predetermined threshold.

Claim 5: The VOD system of claim 1 wherein each receiver includes a demodulator, decoder, and an MPEG frame synchronizer.

Claim 6: The VOD system of claim 1 wherein said headend includes a transmitter having an MPEG frame synchronizer, encoder, and modulator.

Claim 7: The VOD system of claim 1 wherein the transport stream is transmitted over a radio frequency channel.

Claim 8: The VOD system of claim 1 wherein the video server can transmit one or more VOD sessions over one or more radio frequency (RF) channels each associated with a transport stream, and wherein said control server, if necessary, to cause the video server to transmit one or more dummy sessions over each transport stream, as necessary, to maintain a predetermined minimum bandwidth of content over each of the one or more transport streams.

Claim 9: The VOD system of claim 1 wherein when the control server receives a request for a new VOD session from a VOD client, the control server terminates one or more of the one or more dummy sessions, and causes transmission of the new VOD session over the transport stream.

Claim 10: A video-on-demand (VOD) server, comprising: a server that receives requests from one or more VOD clients for one or more VOD sessions, causes transmission of one or more VOD sessions over a transport stream to the one or more VOD clients, determines whether the number of VOD sessions transmitted over the transport stream is below a minimum threshold, and causes transmission of one or more padding sessions over the transport stream if the number of VOD sessions transmitted over the transport stream is below the minimum threshold to maintain the number of VOD sessions at or above the minimum threshold.

Claim 11: The VOD server of claim 10 wherein the server causes transmission of VOD sessions over a plurality of radio frequency channels each associated with a transport stream, the server determines, for each transport stream, whether the number of VOD sessions is below the minimum threshold, and, for each transport stream, causes transmission of one or more padding sessions if the number of VOD sessions transmitted over the respective transport stream is below the minimum threshold to maintain the number of VOD sessions at or above the minimum threshold.

Claim 12: The VOD server of claim 10 wherein when the server receives a request for a new VOD session from a VOD client, the server terminates one or more of the one or more padding sessions, and causes transmission of the new VOD session.

Claims 13-19 (cancelled)

Claim 20: A digital video system, comprising:
a transmission channel;
a plurality of receivers coupled to the transmission channel, a client at each receiver capable of subscribing to one or more video sessions over a transport stream; and
a headend coupled to the transmission channel, said headend including a video server than can transmit one or more video sessions to one or more receivers, and a control server coupled to the video server, the control server to cause the video server to transmit one or more dummy sessions over the transport stream to maintain a predetermined minimum bandwidth of content over the transport stream.

Claim 21: The digital video system of claim 20, wherein the control server to determine whether the bandwidth of content over the transport stream is below a predetermined threshold,

and to cause the video server to transmit one or more dummy sessions, as necessary, to maintain the bandwidth of content at or above the predetermined threshold.

Claim 22: The digital video system of claim 20, wherein the headend transmits digital video programming in accordance to one of a digital broadcast satellite (DBS) system, digital cable system, high definition television (HDTV) system, and video-on-demand (VOD) system.

Claims 23-25 (cancelled)

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(9) Evidence Appendix

Not applicable.

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(10) Related Proceeding Appendix

Not applicable.

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